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ABSTRACT

The author, drawing on 7 years of experience as a community volunteer, recommends ways in which teachers can increase their own understanding of environmental problems and thus become more competent teachers of the subject. These include extending their understanding of the community outside the school; emphasizing local issues as a prelude to involvement in state and national issues; cooperating with the new media; knowing adversaries, including legislators, public officials, school administrators, industrialists, and businessmen; being aware that civil rights and the environment are not separate issues but part of the same problem; circulating information by more effective use of the mimeograph and photocopier; and corresponding with public officials and elected representatives. The National Environmental Education Act and the First Annual Report of the U. S. Council on Environmental Quality are quoted to illustrate the extent and urgency of the problem, and a list of educational priorities is given which includes the need to establish sound, ecologically-oriented attitudes; to achieve an understanding of man's interrelation with his environment; to adopt innovative approaches; to make imaginative use of television and other media; and to involve all segments of society. (MBM)

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STRATEGIES FOR

MANAGING NATURAL RESOURCES THROUGH ECO-ACTION

by

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STRATEGIES FOR MANAGING NATURAL RESOURCES THROUGH ECO-ACTION

I am very grateful for the opportunity to appear before this Inter-American audience this morning, and I should like to begin our discussion on "Strategies for Managing Natural Resources Through Eco-Action" by clarifying my credentials for this privilege. My only claim to any kind of expertise is based on

- 42 years' experience of living with (and in many cases "without") natural resources,
- raising a mixed brood of three youngsters into their teen years,
- becoming conscious of the deterioration of the quality of living in what is presumptiously considered the most progressive country in the world, and
- facing the fact that resolution of the problems requires personal, individual recognition and involvement.

It is from this point of view that we will address the subject today, stressing the concept that <u>you as leaders and teachers must practice what you preach</u>. Unless and until you accept the premise that the survival of the human race depends on ecologically sound environmental management, and that every single one of us must re-evaluate our habits and attitudes, we are wasting our time talking. We allowed these habits to develop without taking the ecological consequences into consideration, and now we must change if we expect today's students to believe the seriousness of the problems, or to accept the responsibility of coping with them.

To understand natural resource management, we must establish some definitions. This leads us first to environmental education, which is, of course, how you will explain and apply the concepts we are talking about. Currently awaiting the

President's signature in the United States is a bill to establish the National Environmental Education Act, from which I quote as follows:

> "Environmental education is an integrated process which deals with man's interrelationship with his natural and man-made surroundings, including the relationship of population, growth, pollution, resource allocation and depletion, conservation, technology, and urban and rural planning to the total human environment. Environmental education is a study of the factors influencing ecosystems, mental and physical health, living and working conditions, decaying cities, and population pressures. Environmental education is intended to promote among citizens the awareness and understanding of the environment, our relationship to it, and the concern and responsible action necessary to assure our survival and to improve the quality of life." (H.R. 18260--as amended by the Senate.)

This covers just about everything...and everybody...indicating in the process that evolution is not necessarily synonymous with progress, unless you acknowledge that you may progress to a lower level of life rather than a higher level.

The pending new law provides many more channels for expanding the scope of environmental education, including community education to reach the many decision makers who are still environmentally ignorant. This brings up another important aspect. In your role as educators, your credibility to the student is based on your relationship to the community more than your classroom presentation...on what you do rather than what you say. Hindsight is useful in this respect to remind us that civilizations have classically underestimated the consequences of their actions and thus have disappeared with the dinosaurs.

Students have a penetrating capacity for sorting the discrepancies caused by our lack of ecological conscience. For most of us, ethics has always been a dusty, old subject relegated to a few remote scholars as we blithely ignored or sublimated the broad implications of world citizenship.

This just won't do:

In order to be a teacher, your civic responsibility comes first. Then...and only then...will you be able to give the student a valid perspective on his relationship and responsibility in the life cycle. Perhaps I should remind you at this juncture that education is no longer confined to the classroom or to formal courses. Education is forever, so to speak.

Not everybody needs a PhD., but we are all perennial students whether we like it or not. We are bombarded by television and a paper explosion of printed materials (which is a pollution problem in itself). We must increase our level of awareness in order to utilize effectively the pertinent information. In particular, we must be conscious of change. We have reached the threshold of understanding that all knowledge is limited, and subject to change based on new discoveries, and as you well know, with ever greater rapidity. Flexibility and adaptability are the key characteristics in this evolutionary process. They are especially important in the search for open-ended solutions which are most likely to begin solving our environmental problems. In this context we should be wary of over-specialization. Generalists are vitally important as catalytic agents, the "glue" to hold the various experts and disciplines together in a balanced system which recognizes that the sum is the total of all these inter-related parts, that it is a closed system and that it has finite parts. This concept can be summarized as an arithmetical equation:

$$\frac{NR + E}{P} = SOL$$

$$\left(\frac{\text{NATURAL RESOURCES plus ENVIRONMENT}}{\text{POPULATION}} \text{ equals STANDARD OF LIVING}\right)$$

One set of figures will dramatize this equation. In the recently released First Annual Report of the U.S. Council on Environmental Quality, we find the following quotation on page 14: "Currently the United States, with about 6% of the world's population, uses more than 40% of the world's scarce or non-replaceable resources..." This depletion of natural resources has profound implications for us and the rest of the world since our technological society depends on these resources for energy, building materials and recreation. And the methods of exploitation often create problems exceeding the value of the resources themselves.

Accepting these limitations is your first step, bearing in mind that our past approach to environmental problem-solving in an ad hoc fashion is the cause of the present dilemma. The second step is working for universal acceptance of these limitations. Obviously, it is a giant step, with many different phases, two of which we believe are most important to you...participatory citizenship and enlightened education. I mention citizenship before education, not only because we know experience is one of the best teachers, but also because it underscores the crucial point that education is NOT algebra, science and term papers. Those are means, not ends. We seem to have lost sight of this in many cases, which I submit accounts for much of the student restlessness at whatever age. Unless we teach algebra for what it is (like grammar or typing, or nearly anything else), a mechanism for understanding or solving problems, (such as all those interlocked in the equation we just mentioned), nobody will be listening.

The most visible, most tangible problems are within a fairly limited radius of where we live. By being aware of them and directly involved in some way in their management and solution, we are able to establish a sense of relativity to problems of larger dimension. And the concept of interdependence becomes real.

REAL---Everything seems to hinge on that word, particularly with the younger generation. It reminds me of an interesting term to describe conservationists who are more talk than action. They are called "nature fakers." By being involved beyond the classroom, teachers avoid the phoniness of spouting lofty platitudes from the isolated segregation of their curricular pódium. No amount of discipline can command the attention of a student who thinks you're a "nature faker."

Now, to save you from such a dreadful fate, I would like to share some suggestions gleaned during the past seven years since I made my own first conscious move towards environmental action. Along with other community volunteers, we have evolved what might be called

RULES FOR PEOPLE, POLITICS AND ECO-ACTION

1. DO YOUR HOMEWORK. What do you really know about your community outside your school? How--or does--your subject relate to the outside environment? Why? What can you do about it? I know you're quite familiar with homework, but how long since YOU did any? It is absolutely essential, and as technology accelerates our capability, it becomes a critical and continuous process. Being an authority on English 101 is not likely to influence City Council, the School Board, the Chamber of Commerce or Student Government. A word of caution should be inserted here about semantics. DON'T. This is one of the

most wasteful games people play. Whatever language you use, English or Spanish or any other, it should be plain. The jargon of math, science or computer terminology must be translated for general consumption, leading again not only to homework but to an emphasis on clear communication.

2. PICK A LOCAL ISSUE. As indicated earlier, your ability to understand a problem is proportional to your distance from it. There are hazards in being too close to a situation, but the further away you are the more indifferent you become. It is extremely difficult for the people where I live in Upstate New York to comprehend the problems in South Dakota or South America, and vice versa. When we emphasize local issues, we do not intend to minimize the needs of the larger issues at state and national levels. It is quite simply the comparative analogy of elementary education to secondary education to higher education, each one based on the one before. Illustrating your subject with local relationships provides a unique teaching device and shows the relevance to life which students are so loudly questioning.

Just one example of this is the experience of one of our tenth grade biology classes. These youngsters were so completely indifferent to classroom lectures that their teacher and I took them on a series of field trips. Initially, they didn't care where we were going so long as it was out ...out of the school.

When we arrived at the Sewage Treatment Plant, several of the girls immediately held their noses, complaining "This place stinks!" But curiosity got the better of them as they watched the operations and began to ask questions. "Is the water pure after processing?" "Why not?" "What does it cost to make the water pure?" "Who pays for it?" "Is it safe to swim in the river?" "Who decides the water quality standards?" With this fusillade of questions continuing, we

moved on to the Water Purification Plant which is the municipal water supply. The students were instantly aware that this facility was "clean" as compared to the "dirty" sewage processing. These discoveries helped demonstrate that biology could be useful. In addition, they benefited from the practice in essay writing, group discussion and debate, and research into an adult problem. I also suspect it was the first time most of them had read a newspaper with any sense of involvement when some of the essays were published in the local Press.

3. UTILIZE THE NEWS MEDIA. Cooperating with the news people can provide educators with very valuable allies. Almost always they know more about the community than anyone else, including the political pecking order which is a major ingredient in public problem solving. If you want the newsmen to respond, even to disagreeable or controversial issues, find out their methods, their deadlines, their interests and their names. And keep in mind that they are seldom influenced by anything but candor and accuracy.

4. KNOW YOUR ADVERSARY. As educators or environmentalists, we cannot afford an isolationist attitude. Ivory towers and tunnel vision are OUT. Plagued as we are with all kinds of pollution...air pollution, water pollution, soil pollution, noise pollution, people pollution...it is imperative that we get acquainted with our legislators, public officials, school administrators, industrialists and businessmen. It is particularly imperative right now if we want evolution not revolution. These troubles are rooted in moral issues and we must carefully avoid being led into an educational swamp.

In the debate on civil rights vs. the environment, a black man brings out another side of the morality issue. He says, "The basic philosophy of industry and government, which must be changed before either problem can be overcome,

is the acquisition of money for sensual pleasures. This is the cause of the misuse of the environment and the dehumanization of the blacks. All this new flair in ecology is an attempt to try to save the environment. The black man is also a part of natural resources." There is no "either-or" with civil rights and the environment. It is a matter of coexistence. Our score on coexistence is not so good, is it? Which once again underscores the compelling necessity for education to focus on the problems first, and the mechanics second. This applies to all levels, but most especially to the colleges for teacher education. Here I call your attention to the undergraduate curriculum at the University of Wisconsin, which concentrates on this approach via its Liberal Education Seminars. In the first year of the LES program, basic concepts are examined, the second is spent in community study and involvement, and the third the students live in a different social culture. As seniors, they attempt to solve the problem of their choice, whether it be road building, water supply, health protection, solid waste disposal or recreation resources, or any other of the many management chores facing us. Isn't it strange that we admit to the need to manage business and industry but have so long ignored the greater need for environmental management?

5. CIRCULATE YOUR INFORMATION. There's an old joke in this country which asks the three fastest means of sending a message. The answer (which I hope translates successfully into Spanish) is telephone, telegraph and tell-a-woman. I recommend all three, and would like to mention several other methods, the mimeograph and the photocopier. Judicious use of these assorted methods can multiply the effectiveness of letters and educational materials. Reproductions can be used as news releases or supplements to them, based on correspondence with public officials and elected representatives, (i.e. pre-

election questionaire on environmental issues). This is a generally neglected area of attention, perhaps because so few people seem to know how to write a proper letter, besides not paying attention to the issues.

One of the most popular fact sheets distributed by our local volunteer citizens group is "Guidelines for Writing to Your Elected Representatives" which lists eleven simple suggestions to let your legislator know your opinion successfully. Every student should understand the technique, and the need for applying it. Along with the national trend, fact sheets on "Pollution Solutions" and "Eco-Action Readings" have also been in demand. Time prohibits discussing the details of all these with you, but I should mention two publications which augment particularly well these suggestions of ours:

1. A Handbook for Environmental Action - Environmental Science Center, 5400 Glenwood Avenue, Minneapolis, Minnesota 55422 (20¢)

2. Community Action for Environmental Quality - U. S. Government Printing Office, Washington, D. C. 20402 (60¢)

A selected basic reading list will be attached to this paper for inclusion in the conference proceedings, but both of the above pamphlets contain more comprehensive reference lists, in addition to their other virtues.

I'm sure by now you know I'm saying your most important task in managing natural resources is to understand and to become involved yourself before you try to explain the problem to your students. We repeat the need for flexibility. An open mind is a prerequisite for the goal of environmental co-existence. In summary, we come back to value choices. Again quoting from the report to Congress on Environmental Quality, "Choices will have to be made on

which problems have first claim on resources. Four main criteria should determine this priority:

- The intrinsic importance of the problems...the harm caused by failing to solve them.
- The rate at which the problems are going to increase in magnitude and intensity over the next few years.
- The irreversibility of the damage if immediate action is not taken.
- The measure of the benefits to society compared to the cost of taking action."

We don't pretend setting priorities is easy. This difficulty is one of the reasons the strategies we have emphasized are directed at human resources. Because unless these are integrated first, the rest of our natural resources won't matter...BUT "no man is an island, and no creature of any kind is independent of its habitat. Changes cannot take place in one part of the complex web of life without affecting the whole. Every proposed human change in the environment must be considered for its total effects. Ignorance of the long-term, indirect consequences of human activities is the root of the contemporary crisis." (President's Council on Recreation and Natural Beauty).

There must be a massive environmental education effort to deal with these problems. This effort should be characterized by the following:

a) Its purpose should be to establish sound, ecologically-oriented attitudes,

b) It should be aimed at achieving an integrated understanding of man's interrelationship with his environment and all of its inhabitants,

c) It should avoid orthodoxy in favor of innovative approaches to accepting a pluralism of values,

d) It will be stimulated by imaginative utilization of new educational technologies, especially television,

e) It should be based on facts and encompass all disciplines, most especially the humanities,

f) It should be differentiated so that the content can be shaped appropriately for the students' level of understanding,

g) It should be aimed at all segments of society,

h) It should be a joint function of many institutions of our society - school, family, church, etc.,

i) It needs special attention to the training of coordinators and consultants to assist teachers in relating their subject effectively to the over-all environmental concepts,

j) It demands cooperation, coordination, and coherence from the diverse public and private agencies and organizations involved,

k) Its most important ingredient is you - individually and collectively - combining participatory citizenship with basic environmental principles.

In closing, I would like to use someone else's words. In "The Answer" Robinson Jeffers advises us that

"Integrity is wholeness, the greatest beauty is
Organic wholeness, the wholeness of life and things,
the divine beauty of the universe. Love that, not man
Apart from that, or else you will share man's pitiful
confusions, or drown in despair when his days darken."

In another of his perceptive poems "Refuges for People", he says:

"There is no escape. We have gathered vast populations
incapable of free survival, insulated
From the strong earth, each person in himself helpless, on
all dependent. The circle is closed, and the net
Is being hauled in..."

Finally, I quote Mitchell Krucoff from Wilson High School, in Washington, D.C., who expresses the compelling convictions of today's young people:

"I want to live,
I want to learn,
I want to teach,
I want to help,
But they say I can't do it now.

I am told that I must wait till I grow up,
And old,
And become wise,
On that day I'll take a hold of life,
Just in time to die.

To die throughout life
That one may live throughout death
Is a game I cannot play.

Yesterday is gone,

Tomorrow is yet to come,

The time is now,

And now is the time to act."